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EXAMINER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/568,046  
Filing Date: February 10, 2006  
Appellant(s): CHRISTENSEN ET AL.

Robert B. Levy (28,234)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 6/7/2010 appealing from the Office action mailed 4/22/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

1 – 25

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

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subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

### **(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

### **(8) Evidence Relied Upon**

7,254,112	Cornet et al.	08-2007
5,625,780	Hsieh et al.	04-1997
6,539,534	Bennett	03-2003
5,301,346	Notarianni et al.	04-1994
4,764,959	Watanabe et al.	08-1988

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 – 11, 13 – 17, and 19 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780) and what is old and well known in this art as evidenced by Notarianni et al. (U.S. 5,301,346).

Regarding claims 1 and 14, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the broadcast router;

At least one device (Fig. 1, 106);

Cornet et al. fail to teach a programmable device, a configuration control card, and the remaining limitations.

Hsieh et al. teach a programmable device (Fig. 2, 16);

A configuration control (Fig. 2, 30) for storing configuration information for configuring the at least one programmable device to perform a first set of functions (col. 5, line 67 – col. 6, line 12);

Wherein the configuration control is configured for removal and replacement by at least one other configuration control that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the configuration control and programmable device as taught by Hsieh et al. into the system of Cornet et al. for the purpose of flexibly interconnecting cards and providing uniform capacitive load, as well as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been obvious in order to improve the performance of the system, as well as making it easily modifiable as the system changes.

Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM 30) is incorporated on a card. The Examiner takes Official Notice that it is old and well

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known in this art to incorporate a digital device (ROM) on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed circuit card. This would have been obvious since to do so is routine in this art.

Regarding claims 2, 15 and 20, Cornet et al. teach the additional limitation wherein the broadcast router employs switch points (col. 5, lines 24 – 29), the data received by the plurality of input cards (Fig. 1, LEFT 150) includes input streams (col. 4, lines 21 – 26), And the one or more functionalities comprise at least one of receiving alternate input streams (col. 3, lines 52 – 55).

Regarding claims 3, 16 and 21 Hsieh et al. teach the additional limitation wherein the configuration information comprises at least configuration data for FPGAs (where an FPGA may be interpreted as an FPID; col. 5, line 67 – col. 6, line 12).

Regarding claims 4 and 17, Hsieh et al. teach the additional limitation wherein the difference involves at least one of adding at least one new function and removing at least one existing function (col. 6, lines 4 – 10).

Regarding claims 5 and 22, Hsieh et al. fail to teach wherein the at least one programmable device is on at least one of the plurality of input cards and the plurality of

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output cards. However, this modification would be obvious in order to make the programmable device more readily substituted. While programmable devices such as the FPID of Hsieh et al. may be programmed in the field, placing it on a card would allow a user of lesser expertise to perform an upgrade or change to the system. Additionally, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 6, Hsieh et al. teach the additional limitation comprising:

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

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Regarding claims 7 and 23, Hsieh et al. teach the additional limitation wherein at least one of the expansion card and the matrix card provides support protocols to change input/output assignments of the data (col. 6, lines 4 – 10).

Regarding claim 8, Hsieh et al. fail to teach wherein the expansion card and the matrix card are implemented on a same card. However, this modification would be obvious in order to reduce cost as well as to decrease the overall footprint of the system. Additionally, the Examiner notes that integration of prior art components is not a patentable distinction, because it would not modify the operation of the system. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

Regarding claim 9, Hsieh et al. fail to teach wherein the at least one programmable device is disposed on at least one of the expansion card and the matrix card. However, this modification would be obvious in order to make the programmable device more readily substituted. While programmable devices such as the FPID of Hsieh et al. may be programmed in the field, placing it on a card would allow a user of lesser expertise to perform an upgrade or change to the system. Additionally, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).



Regarding claims 11 and 24, Hsieh et al. fail to teach wherein the at least one programmable device is disposed on at least the control card. However, this modification would be obvious in order to make the programmable device more readily substituted. While programmable devices such as the FPID of Hsieh et al. may be programmed in the field, placing it on a card would allow a user of lesser expertise to perform an upgrade or change to the system. Additionally, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 13, Hsieh et al. teach the additional limitation wherein the configuration control card comprises a user-input device for receiving a user input for initiating a configuration of the at least one programmable device (col. 7, lines 27 – 51; col. 8, lines 3 – 25).

Regarding claim 19, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the broadcast router;

At least one device (Fig. 1, 106);

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

Cornet et al. fail to teach a programmable device, a configuration control card, and the remaining limitations.

Hsieh et al. teach a programmable device (Fig. 2, 16);

A configuration control (Fig. 2, 30) for storing configuration information for configuring the at least one programmable device to perform a first set of functions (col. 5, line 67 – col. 6, line 12);

Wherein the configuration control is configured for removal and replacement by at least one other configuration control that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the configuration control and programmable device as taught by Hsieh et al. into the system of Cornet et al. for the purpose of flexibly interconnecting cards and providing uniform capacitive load, as well as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been obvious in order to improve the performance of the system, as well as making it easily modifiable as the system changes.

Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM 30) is incorporated on a card. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device (ROM) on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed circuit card. This would have been obvious since to do so is routine in this art

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

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Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

\* \* \*

Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780) and what is old and well known in this art as evidenced by Notarianni et al. (U.S. 5,301,346) and Bennett (U.S. 6,539,534).

Regarding claim 10, Hsieh et al. teach the additional limitation comprising a control device for providing support protocols to change input/output assignments of the data (col. 5, line 67 – col. 6, line 4), but fail to teach the device disposed on a control card.

. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Bennett (Fig. 3, 305).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

\* \* \*

Claims 12, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780), Watanabe et al. (U.S. 4,764,959), and what is old and well known in this art as evidenced by Notarianni et al. (U.S. 5,301,346).

Regarding claims 12, 18 and 25, Cornet et al. and Hsieh et al. fail to teach wherein at least a portion of the configuration information and the other configuration information is encrypted.

Watanabe et al. teach encrypting configuration information on a ROM (as in Hsieh et al.) for the purpose of preventing the information from being copied by a third party (col. 1, lines 47 - 53; col. 3, lines 12 - 28).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the encryption means of Watanabe et al. into the ROM of Cornet et al. and Hsieh et al. for the purpose of preventing the information from being copied by a third party. This would have been obvious for copyright protection purposes.

### **(10) Response to Argument**

Applicant has argued that Cornet teaches away from the use of a programmable device, but rather, teaches changing the functionality of a network element by adding internal headers to the data flowing through the network element. The Examiner disagrees with Applicant's mischaracterization of the references. While Cornet does route traffic through the fabric 106 according to the internal header information, the internal header information is **not** used to **alter** the functionality of the router. Rather, the internal header is used as part of the basic and routine processing of the router (Cornet: col. 5, lines 9 - 14). The internal header of Cornet is interpreted by the fabric 106, and based on the header, routes the cell to the appropriate destination. Hsieh's programmable device relates to easily modifying the internal operation of the switch fabric (Fig. 2, 22). Thus, the substitution of a **programmable** switch fabric as taught by Hsieh for a **non-programmable** switch fabric is completely transparent to the system operation of Cornet, and does not render it unsatisfactory for its purpose. Indeed, the operation of the switch fabric of Cornet in combination with Hsieh remains the same with respect to the internal headers. The difference is in the manner by which the switch fabric interprets the said headers. Modifying this interpretation of the said headers is achieved through the use of a replaceable ROM (Hsieh: col. 6, lines 18 - 21). Said another way, assume that a data cell, having the internal header of Cornet, contains an address of 4, and arrives at the switch fabric. The switch fabric, having multiple links (Cornet: Fig. 1, 112) must decipher which link corresponds to address 4, and route it accordingly. This step of deciphering, and the correspondence information

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which it is based upon, is precisely the programmable information which may be altered in the programmable switch fabric of Hsieh. Thus, contrary to Applicant's arguments, the substitution of a programmable switch fabric for a non-programmable switch fabric does not change the principle of operation of Cornet. Rather, the modification of Hsieh with Cornet simply makes the system of Cornet more flexibly adaptive to an evolving system. Therefore, the Examiner maintains that the claim is obvious in view of the applied prior art, and the rejection is proper.

Regarding Applicant's argument that Hsieh fails to teach a ROM that is "configured for removal and replacement," the Examiner is not persuaded. Hsieh teaches "The backplane scheme can be changed simply by replacing or reprogramming ROM 30..." In the rejection the Examiner took Official Notice that it is old and well known in the art to incorporate a digital device such as a ROM on a printed circuit board. Thus, Hsieh in view of what is old and well known in the art teaches a switch fabric that is easily reprogrammed by removing and replacing a printed circuit board containing a ROM. Rather than attack the combination of Hsieh with what is old and well known in the art, Applicant has relied upon attacking Hsieh individually, citing the costly and risky process of physically removing a component from a circuit board. Again, as in the rejection, the proposed combination renders a ROM which is installed on a printed circuit board. Thus, to replace the ROM, the circuit board in its entirety is replaced. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed.

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Cir. 1986). On the outset, the Examiner notes that the process of replacing circuit boards to attain new functionality in a computer system, rather than by removing and replacing discrete components on a circuit board, has been conventionally and routinely performed by computer technicians and end users over at least the last 25 years.

Therefore, the prior art clearly reads on the invention as claimed by Applicant.

Applicant's remaining arguments have been addressed above, and thus the Examiner maintains the rejection is proper and should be affirmed.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Matthew D. Spittle  
Examiner, Art Unit 2111

/Mark Rinehart/  
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